

**DEVICE AND METHOD FOR VARIABLE ATTENUATION**  
**OF AN OPTICAL CHANNEL**

**ABSTRACT OF THE DISCLOSURE**

[0075] A device for variable attenuation of an optical  
5 channel includes an elongated core surrounded by a  
cladding. Optical energy propagating along the longitudinal  
axis of the core is normally confined thereto by the  
difference in refractive indices between the core and  
cladding. The thermo-optic coefficients of the core and  
10 cladding are closely matched such that waveguide  
confinement is substantially invariant with respect to  
ambient temperature. The device further includes a thermal  
source arranged above the core. The thermal source is  
operable to generate a temperature gradient of controllable  
15 magnitude along a vertical axis extending through the core.  
The temperature gradient causes reduction of the local  
refractive index within the core relative to surrounding  
regions of the cladding such that a portion of the optical  
energy is deflected away from the thermal source and  
20 extracted from the core.